

Grade 8

AIIC1: Write or model a linear equation to solve a simple applied problem.

Key: B ($v = 1.42n$)

When Maria went to Canada, one U.S. dollar was worth \$1.42 in Canadian money. If n stands for the number of U.S. dollars, which equation gives the value (v) of those dollars in Canadian money?

☐ $v = n - 1.42$

☐ $v = 1.42n$

☐ $v = \frac{n}{1.42}$

☐ $v = \frac{1.42}{n}$

Choice analysis:

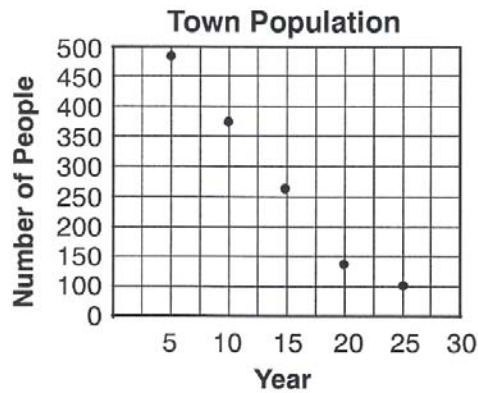
- A. Selects wrong operation
- B. key
- C. Selects wrong operation
- D. Selects wrong operation

Grade 8

DIIIIB1: Use a scatterplot and its line of fit to determine if a positive relationship, a negative relationship, or no relationship exists between two sets of data and then use them to make predictions.

Key: B (negative)

The graph shows the population of a small town in 5-year intervals.



Which kind of relationship exists between the year and the population?

- ☐ positive
- ☐ negative
- ☐ neutral
- ☐ none

Grade 8

AIIC1: Write or model a linear equation to solve a simple applied problem.

Key: C (-1, -2)

A cellular phone company charges monthly rates according to the following plan:

- **Monthly fee of \$23.95**
- **The first 100 minutes of calling time are free**
- **\$0.08 charge per minute of calling time over 100 minutes**

If c is the total monthly cost, and m is the number of minutes of calling time, which equation models this rate plan when m is greater than 100 minutes?

- ☐ $c = 0.08m - 76.05$
- ☐ $c = 0.08(m - 100) - 23.95$
- ☐ $c = 23.95 + 0.08(m - 100)$
- ☐ $c = 23.95 + 0.08m$

Choice analysis:

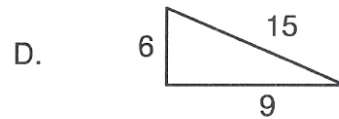
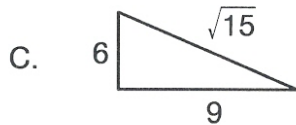
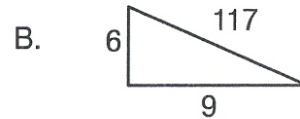
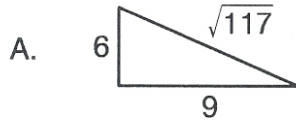
- A. Subtracts \$23.95 from 100 minutes
- B. Chooses wrong operation for monthly fee
- C. key
- D. Ignores “first 100 minutes”

- Grade 8

GIC3: Apply the Pythagorean theorem to find the missing length of a side of a right triangle.

Key: A ($\sqrt{117}$)

Jacob used the Pythagorean Theorem to see how much time he would save taking a shortcut home from football practice. He usually walked 6 blocks south and 9 blocks east. Which picture shows his shortcut?



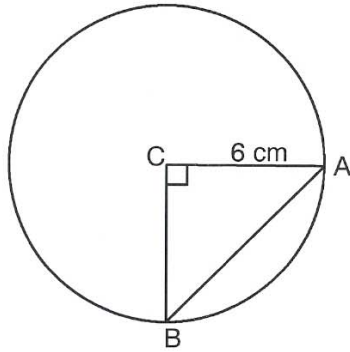
Choice analysis:

- A. Key
- B. Squares each leg, does not take square root
- C. Does not square legs before adding
- D. Adds legs to get hypotenuse

Grade 8

GIC3: Apply the Pythagorean theorem to find the missing length of a side of a right triangle.

Key: D ($\sqrt{72}$)



Find the length of \overline{AB} .

☐ $\sqrt{12}$ cm

☐ $\sqrt{18}$ cm

☐ 36 cm

☐ $\sqrt{72}$ cm

Choice analysis:

- A. Adds two legs, then takes square root
- B. Square 6 then divide 36 by 2 and take the square root
- C. Squares 6 (or multiplies 6 by 6)
- D. Key

Grade 8

GIC1: Given the length of three segments, determine and explain whether or not they can form a triangle

Key: C (an 8 cm rod)

Maggie is using rods to build different-sized triangles. The two rods she has already selected are 3 cm and 6 cm. Which can she use to complete her triangle?

- ☐ a 2 cm rod
- ☐ a 3 cm rod
- ☐ an 8 cm rod
- ☐ a 9 cm rod

Choice analysis:

- A. Divides 6 by 3
- B. 3 cm in stem (or subtracts 3 from 6)
- C. Key
- D. Adds 3 and 6

Grade 8

GIC1: Given the length of three segments, determine and explain whether or not they can form a triangle

Key: A ($5 < m < 25$)

**The measures of two sides of a triangle are 10 cm and 15 cm.
If m represents the length of the third side, which inequality
gives the possible lengths?**

- ☐ $5 < m < 25$
- ☐ $5 < m \leq 25$
- ☐ $5 \leq m < 25$
- ☐ $5 \leq m \leq 25$

Choice analysis:

- A. Key
- B. Does not remember (or understand) that triangle inequality is not inclusive (should not use \leq)
- C. Does not remember (or understand) that triangle inequality is not inclusive (should not use \leq)
- D. Does not remember (or understand) that triangle inequality is not inclusive (should not use \leq)